

AD-A052 120

DEFENSE SYSTEMS MANAGEMENT COLL FORT BELVOIR VA
OVERVIEW OF R AND D LIFE CYCLE ACQUISITION FOR NON-TACTICAL COM--ETC(U)
NOV 77 J M VELASQUEZ

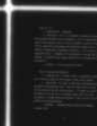
F/G 17/2

UNCLASSIFIED

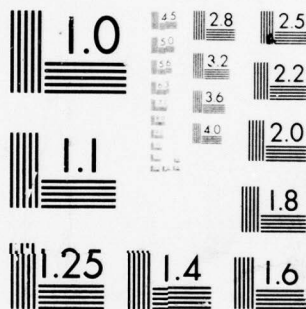
NL

| OF |

AD
A052 120



END
DATE
FILMED
5-78
DDC



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

AD-A052120

1

DEFENSE SYSTEMS MANAGEMENT COLLEGE

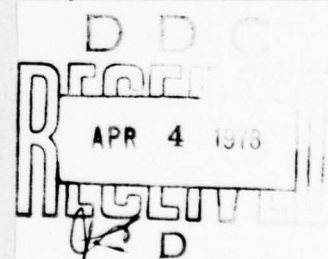


PROGRAM MANAGEMENT COURSE INDIVIDUAL STUDY PROGRAM

OVERVIEW OF R&D LIFE CYCLE
ACQUISITION FOR NON-TACTICAL
COMMUNICATION SYSTEMS

STUDY PROJECT REPORT
PMC 77-2

Joseph Manuel Velasquez
GS-13 DAC



FORT BELVOIR, VIRGINIA 22060

DISTRIBUTION STATEMENT A

Approved for public release;
Distribution Unlimited

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER	2. GOVT ACCESSION NO.	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) OVERVIEW OF R&D LIFE CYCLE ACQUISITION FOR NON-TACTICAL COMMUN- ICATION SYSTEMS		5. TYPE OF REPORT & PERIOD COVERED STUDY PROJECT REPORT 77-2
		6. PERFORMING ORG. REPORT NUMBER
7. AUTHOR(s) JOSEPH MANUEL VELASQUEZ		8. CONTRACT OR GRANT NUMBER(s)
9. PERFORMING ORGANIZATION NAME AND ADDRESS DEFENSE SYSTEMS MANAGEMENT COLLEGE FT. BELVOIR, VA 22060		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS
11. CONTROLLING OFFICE NAME AND ADDRESS DEFENSE SYSTEMS MANAGEMENT COLLEGE FT. BELVOIR, VA 22060		12. REPORT DATE 1977-2
		13. NUMBER OF PAGES 75
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		15. SECURITY CLASS. (of this report) UNCLASSIFIED
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report)		
UNLIMITED		<div style="border: 1px solid black; padding: 5px; text-align: center;"> DISTRIBUTION STATEMENT A Approved for public release; Distribution Unlimited </div>
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		ACCESSION for DTIC White Section <input checked="" type="checkbox"/> DDD Buff Section <input type="checkbox"/> UNANNOUNCED <input type="checkbox"/> JUSTIFICATION BY DISTRIBUTION/AVAILABILITY CODES Dist. AVAIL. and/or SPECIAL <div style="border: 1px solid black; padding: 10px; font-size: 2em; text-align: center;">A</div>
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) SEE ATTACHED SHEET		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) SEE ATTACHED SHEET		

DEFENSE SYSTEMS MANAGEMENT COLLEGE

STUDY TITLE:

Overview of R&D Life Cycle Acquisition for Non-Tactical Communication Systems

STUDY PROJECT GOALS:

The goal for this paper is to outline the acquisition process of non-tactical communication systems (excluding air traffic control and satellite ground systems).

STUDY REPORT ABSTRACT:

This paper addresses the overview of the life cycle system acquisition for non-tactical communication systems (excluding air traffic control and satellite ground systems) based on the recent DODD 5000.1 and 5000.2, the draft AR 1000-1, and existing Army regulations. It will serve as a guide for the development, procurement and deployment of communication systems. It will be useful for new personnel who are not familiar with the overview of non-tactical communication systems acquisition.

SUBJECT DESCRIPTORS:

Program/Project Management, Systems Acquisition Life Cycle (10.02.04).

NAME, RANK, SERVICE

Joseph M. Velasquez, GS-13, DAC

CLASS

PMC 77-2

DATE

November 1977

OVERVIEW OF R&D LIFE CYCLE ACQUISITION
FOR NON-TACTICAL COMMUNICATIONS SYSTEMS

Individual Study Program
Study Project Report
Prepared as a Formal Report

Defense Systems Management College
Program Management Course
Class 77-2

by

Joseph Manuel Velasquez
GS-13 DAC

November 1977

Study Project Advisor
Mr. William H. Cullin

This study project represents the views, conclusions and recommendations of the author and does not necessarily reflect the official opinion of the Defense Systems Management College or the Department of Defense.

EXECUTIVE SUMMARY

The purpose of this paper is to outline the acquisition of non-tactical communication systems (excluding air traffic control and satellite ground systems). The emphasis is on "outline" since there is no single formula which applies to all types of materiel acquisitions.

Current Army policy on system acquisition is based on four approaches: (1) buying equipment already developed from commercial (domestic or foreign) or military (other services or allies) sources, (2) product improvement of current standard equipment, (3) modification of commercially available items, and (4) initiation of a research and development program. The last alternative is the least desirable because it is usually the most costly and most time consuming alternative. It is the last recourse for meeting materiel needs. In order to manage a R&D acquisition program, an understanding of the role of R&D in the total or life cycle system acquisition process is required.

TABLE OF CONTENTS

TITLE SHEET	i
EXECUTIVE SUMMARY	ii
LIST OF FIGURES	iv
LIST OF TABLES	v

SECTION

I. INTRODUCTION	1
II. FLOW CHARTS AND DESCRIPTION OF EVENTS	5
III. SUMMARY	58
APPENDIX A: GLOSSARY	61
APPENDIX B: ACRONYMS	68

LIST OF FIGURES

FIGURES

1. Preconceptual Phase	6
2. System Concepts Phase	20
3. Demonstration and Validation Phase	35
4. Full-Scale Engineering Development Phase	45
5. Production and Deployment Phase	52

LIST OF TABLES

TABLES

1. Levels of Decision	3
2. Mission Element Need Statement (MENS)	12
3. Decision Coordinating Paper	30
4. Defense System Acquisition Review Council (DSARC)	33
5. Outline Acquisition Plan	38
6. Acquisition Plan	47
7. Typical Table of Contents for IIP's	55

SECTION I

INTRODUCTION

The advent of the new DODD 5000.1 (18 January 1977) with milestone zero for major systems is part of the continuous evolution of the acquisition process for weapon systems. In the early 1960's, Secretary of Defense McNamara initiated a weapon acquisition policy which was known as the total package procurement concept. It consisted of an early commitment to a single contractor for both the R&D and production based on an early paperwork system analysis. This policy proved to be unsatisfactory because it was costly and allowed little flexibility to meet new requirements and advances in technology.

In the early 1970's, Secretary of Defense Packard redirected the acquisition process with the milestone concept. It required that operational needs be defined, a prototype be developed and tested, and a decision review be conducted prior to committing funds for the production phase. The latest DODD 5000.1 and 5000.2 not only reaffirms the milestone concept, but it introduces Milestone 0 -- program initiation -- with the Mission Element Need Statement (MENS). The Secretary of Defense has to approve the MENS prior to entering the conceptual phase.

The Army is preparing a new AR 1000.1, based on the DODD 5000.1 and 5000.2. The AR will contain the requirement of the MENS for describing the mission and justifying the initiation of a new major system

acquisition. It will state that a project manager (PM) will be assigned for all major systems after approval of the MENS at Milestone 0. The Army System Acquisition Review Council (ASARC) will develop recommendations to the Secretary of the Army (SA) on major system acquisition. The decision review for the acquisition of non-major systems is the In-Process Review (IPR). The materiel developer/mission assignee agency will normally conduct IPR. Table 1 summarizes the levels of decision for Army system acquisitions as identified in a draft AR 1000.1.

This paper addresses the overview of the life cycle system acquisition for non-tactical communication systems (excluding air traffic control and satellite ground systems) based on the recent DODD 5000.1 and 5000.2, the draft AR 1000.1, and existing Army regulations. It will serve as a guide for the development, procurement and deployment of communication systems. It will be useful for new personnel who are not familiar with the overview of non-tactical communication systems acquisition. Figures 1, 2, 3, 4 and 5 in the following chapter outline the life cycle system acquisition process from initial concept investigation to deployment. It will pertain to major and non-major systems and to the acquisition of non-development systems. Each non-document event contains an activity descriptor, responsible organization and type of appropriations required to support the activity. The description of an event is found by matching the event number with the narration number in the text. Each figure corresponds to a major acquisition segment--preconceptual, system concept,

TABLE 1

Levels of Decision

TYPE ACQUISITION	LEVEL OF APPROVAL	TYPE REVIEW	CRITERIA	DECISION RECORDING DOCUMENT
MAJOR PROGRAMS	SECDEF	DSARC ASARC	Programs of significant interest, importance, or impact. Threshold \$75M (or more) RDTE or \$300M (or more) procurement costs.	DCP*
	SA	ASARC	As directed by ASARC Chairman but not included above.	APM**
NON-MAJOR PROGRAMS	HQDA (DCSRDA)	IPR	As directed by DCSRDA.	AP***
	COMMAND (MATERIEL DEVELOPER)	IPR	\$0-75M RDTE and \$0-300M procurement costs.	AP

* Decision Coordinating Paper

** Army Program Memorandum

*** Acquisition Plan (Formally called Development Plan)

demonstration and validation, full scale engineering development, and production and deployment.

The events in the figures can occur any time in a given fiscal year. But the funding of the activities in the figures are not event oriented. That is, the funding process -- the Planning/Programming/Budgeting System (PPBS) - is calendar oriented. The identification of a funding requirement in the PPBS is accomplished by the submission of the Program Objective Memorandum (POM). The POM is submitted seventeen months before the target fiscal year (current fiscal year plus two) begins. The reader should keep this in mind as he/she reads the following flow charts and descriptions of events.

SECTION II

FLOW CHARTS AND DESCRIPTION

OF EVENTS

**PROGRAM INITIATION
(MILESTONE 0)**

PRECONCEPTUAL PHASE

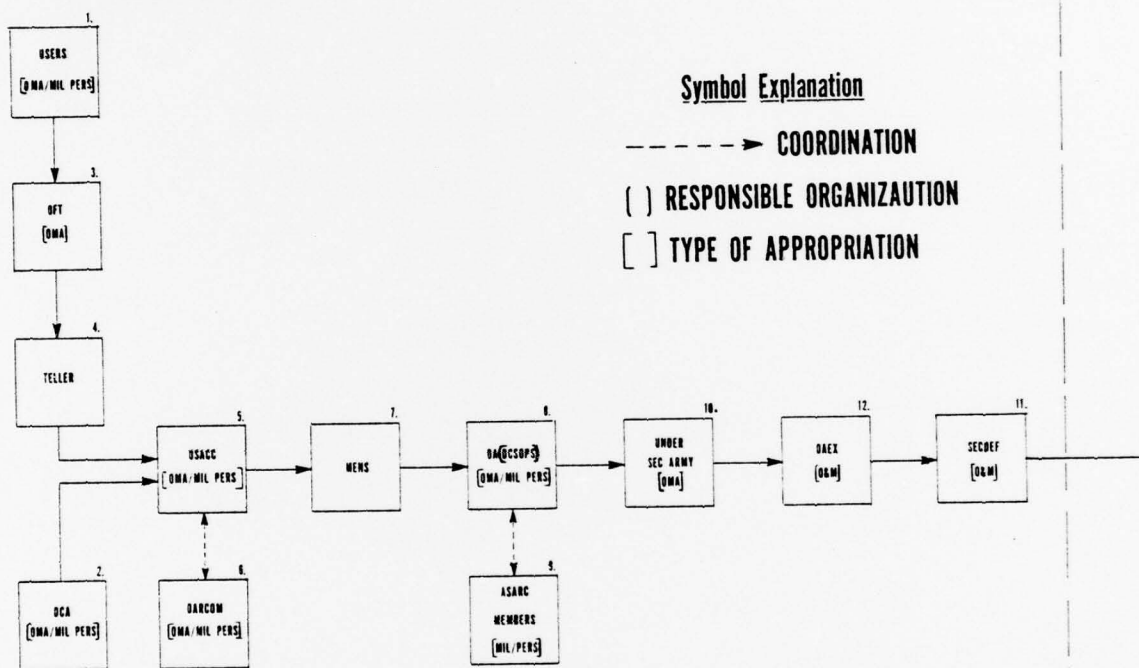


Figure 1

Event 1, Users

- a. Responsibility. Commanders of the Signal Commands
- b. Description. The users are the various subcommands of USACC.

They are:

- The 7th Signal Command, headquartered at Fort Ritchie, MD, provides support to the Defense Communications Systems (DCS) for all 50 states, the Panama Canal Zone and Puerto Rico. It also operates three satellite communications terminals. The terminal at Fort Detrick, MD, is an integral facility in the operation of the newly upgraded Washington-Moscow hotline. The satellites, launched and controlled by the Air Force, circle in an orbit about 23,000 miles above the earth.
- The 5th Signal Command in Worms, Germany, serves West Germany, Italy, Turkey, Iran, England, the Netherlands, Belgium, Spain and Saudi Arabia.
- The 6th Signal Command at Fort Shafter provides communications to units in the Far East.
- The 11th Signal Group headquartered at Fort Huachuca supports worldwide emergency situations in communications.

c. Reference. Soldiers, "Voice of the Army", Janet Hake, March 1977.

Event 2, DCA

- a. Responsibility. Defense Communications Agency
- b. Description. The Defense Communications Agency (DCA) is responsible for the Defense Communication System (DCS). There are nine technology areas to the DCS RDT&E program: Communications Processors, Secure Communications, Transmission, Satellite Communications, Terminals, System Control, System Engineering/Transition Validation, Operations Research/Model Development, and Survivability. The DCS is supported by the DCA, MilDeps and other government agencies.
- c. Reference. Proposed MIL-STD-187-310, March 1976.

Event 3, OFT

- a. Responsibility. HQDA (DSCOPS), User.
- b. Description. Operational Feasibility Testing (OFT) is conducted by the user in order to obtain an operational evaluation of existing systems, to provide inputs for a R&D requirement document, to support an outline acquisition plan (OAP) and acquisition plan (AP) and to initiate a product improvement proposal (PIP). This will be funded with Operational and Maintenance, Army (OMA) appropriation.
- c. Reference. AR 70-10 and AR 71-3.

Event 4, TELER.

- a. Responsibility. User.
- b. Description. A telecommunications requirement (TELER) for non developmental items is a document upon which the planning, programming,

budgeting justification, and management evaluation is based for non-tactical telecommunications services, facilities, systems, equipment and engineering and technical assistance. A TELER may stem from almost any organizational element in the Army, DA, DOD or JCS. Depending upon the dollar value, priority, military or political sensitivity of the task, the TELER may travel through command channels as high as DOD for approval or approved at Headquarters, USACC. Once a TELER is approved, USACC issues a Command Electronics Mission Order (CEMO).

c. Reference. US Army Communications Systems Agency, Manager's Guide, February 1976.

Event 5, USACC

a. Responsibility. US Army Communication Command (USACC).

b. Description. USACC is responsible for continuing analysis of non-tactical telecommunication mission areas. The continuing analysis is to identify deficiencies in existing or projected capability or projected physical obsolescence, or a technological or cost savings opportunity. USACC is a combat developer and operational tester and establishes materiel development objectives and requirements and for conducting operational tests and evaluation of communications equipment developed for use in the DCS; post, camp, station air traffic control systems; and other communications, as specifically designated by HQDA.

c. Reference. DOD Directive 5000.1 and 5000.2, draft AR 1000.1.

Event 6, DARCOM

a. Responsibility. Commander, US Army Materiel Development and Readiness Command (DARCOM)

b. Description. The Commander, US Army Materiel Development and Readiness Command (DARCOM) is responsible within assigned areas for RDTE, acquisition, and logistic support of materiel, systems, or techniques required by the Department of the Army. As the Army's principal materiel developer, Commander, DARCOM is responsible for:

(1) Conducting RDTE, engineering, production, and support of materiel within his assigned areas.

(2) Developing advanced materiel concepts for consideration by the Army in the formulation of doctrine, organization, capability goals, and materiel requirements for the future Army.

(3) Participating with the combat developer in the investigation of the need for a new or improved mission capability and the preparation of the Mission Element Need Statement (MENS).

(4) Participating with the combat developer in the preparation of Letters of Agreement (LOA) to initiate joint investigations of promising materiel programs.

(5) Assisting combat developers in the preparation of Required Operational Capability (ROC) and Letter Requirements (LR).

(6) Preparing required data for Decision Coordinating Papers (DCP).

(7) Conducting materiel program in process reviews (IPR).

(8) Conducting development testing (DT), including early development testing of promising foreign systems.

(9) Providing data in support of Cost and Operational Effectiveness Analysis (COEA) and cost estimates when required to support program decisions and budgeting.

(10) Determining, in coordination with the user representative, the need for system support equipment of all types, to include personnel training equipment.

(11) Providing a clearing house for collection and interpretation of foreign system test data.

(12) Achieving and maintaining the interoperability of Army, joint, and allied systems.

c. Reference. Draft AR 1000.1.

Event 7, MENS

a. Responsibility. USACC.

b. Description. The mission element need statement (MENS) describes mission and justifies the initiation of a new major system acquisition. The MENS shall not be more than ten pages. Table 2 contains an outline of the MENS.

c. References. DOD Directive 5000.1 and 5000.2.

TABLE 2
MISSION ELEMENT NEED STATEMENT (MENS)

I. Mission

- A. Mission Area: Identify mission area(s) which this mission is part of.
- B. Mission Element Need Task: Identify capabilities required, but not hardware characteristics, required to perform Mission Element Need Task(s).

II. Threat: Assess the projected threat against which the capability is required. Explain the change in threat and how the new capability will meet the new threat.

III. Alternative Systems: Describe the existing and projected systems which can perform the mission(s). Include systems developed by the other Services and Allied capabilities if appropriate.

The existing capabilities of each item below should be evaluated as a minimum--with a statement of N/A if such is the case:

- A. Army
- B. Navy
- C. Air Force
- D. Marine Corps
- E. Allied or Appropriate Foreign Capabilities.

- IV. Assessments: Assess the need in one or more of the following terms:
 - A. Assess deficiencies of existing capability.
 - B. Technological Opportunity.
 - C. Identify potential assets to be phased out in order to pay for operating and support cost of new capability.
 - D. Is there a potential return on investment?
 - E. Vulnerability of existing system.
 - F. What is the potential increase in effectiveness?
- V. Constraints: Identify manpower, timing, R&D cost, procurement cost, etc., constraints of new program.
- VI. Impact of Staying with Present System.
 - A. Impact on meeting projected threat.
 - B. Impact on combat effectiveness.
 - C. Impact on availability.
- VII. Plan: Identify plan to explore competitive alternative concepts in preparation for Milestone I.
 - A. Identify alternative concepts.
 - B. Identify studies needed.
 - C. Plan for establishing a system program office.
- VIII. Resources: General statement of manpower, funding, and schedule required to prepare for Milestone I.

Event 8, DA (DCSOPS)

a. Responsibility. Deputy Chief of Staff for Operations and Plans (DSCOPS).

b. Description. The Deputy Chief of Staff for Operations and Plans (DCSOPS) has Army General Staff responsibility for the development of strategic concepts, estimates, plans, and broad force requirements. Specifically, DCSOPS has Army General Staff responsibility for:

(1) Overall force development, including planning for mid- and long-range force development, prescribing mission and operational capability goals, establishing priorities for development and acquisition of materiel, and integrating resultant systems into the force structure.

(2) Developing DA policy and guidance for materiel requirements documents to include Science and Technology Objectives Guide (STOG), Mission Element Need Statements (MENS), Letters of Agreement (LOA), Required Operational Capabilities (ROC) documents, Training Device Requirements (TDR) documents, Basis of Issue Plans (BIOP), and Letter Requirements (LR) documents.

(3) Developing, in coordination with OTEA, DA policy and guidance for the user test program which includes operational testing (OT), force development testing and experimentation (FDTE), and joint user testing.

(4) Approving all STOG, MENS, LOA which project advanced development costs in excess of \$15M.

(5) Developing HQDA recommendations on systems proposed to be designated as major.

(6) Determining need for Special Task Force (STF) or Special Study Group (SSG).

(7) Upon ROC approval, designating a major command with which the combat developer and materiel developer are to coordinate the activities necessary to familiarize and prepare an operational unit and associated support units to receive the systems at the time of initial operational capability (IOC).

(8) Developing DA policy and guidance for COEA, including staff supervision of COEA throughout the acquisition cycle, and reviewing and providing independent assessment of COEA for major systems.

(9) Providing, for major system decision milestones, assessment of operational risk and of NATO standardization/interoperability.

c. Reference. Draft, AR 1000.1.

Event 9, ASARC Members

a. Responsibility. Headquarters, DA.

b. Description. The members of the Army System Acquisition Review Council (ASARC) are a group of top managers of the Army who meet to make recommendations to the Secretary of the Army on major systems acquisition.

c. Reference. Draft AR 1000.1.

Event 10 and 11, UNDER SEC ARMY, SEC ARMY and SECDEF.

a. Responsibility. Under Secretary of the Army, Secretary of the Army, and Secretary of Defense.

b. Description. The MENS is staffed with OSD by the ASARC Executive Secretary, signed by the Under Secretary of the Army, and forwarded to the Secretary of Defense with OSD comments through the DAEX.

c. Reference. Draft AR 1000.1.

Event 12, DAEX

a. Responsibility. Defense Acquisition Executive (DAEX).

b. Description. Functions are: Under the direction, authority, and control of the Secretary of Defense, and in coordination with the functional Assistant Secretaries of Defense, the Defense Acquisition Executive shall perform the following functions:

(1) Integrate and unify the management process, policies, and procedures for defense system acquisition.

(2) Monitor the implementation of the policies and practices in the Circular A-109, and in the system acquisition policies of the Secretary of Defense.

(3) Coordinate the development of acquisition investment planning for the DoD to assure the continuity of decisions among the conceptual, development, production, and operational phases of the acquisition of defense systems.

(4) Coordinate acquisition investment planning with the Defense Planning and Programming Guidance (DPPG), the Planning and Programming Guidance Memorandum (PPGM), and the Planning, Programming, Budgeting System (PPBS).

(5) Serve as the permanent Chairman of the Defense Systems Acquisition Review Council (DSARC).

(6) Strengthen the basis for the Secretary of Defense's decisions at the four key acquisition milestones by assuring that the requirements and viewpoints of all functional areas involved in major system acquisition are given full consideration during DSARC deliberations and are properly integrated in the DSARC recommendations sent to the Secretary.

(7) Approve/disapprove, after consultation with the other DSARC members, the format and content of individual Decision Coordinating Papers (DCP).

(8) Advise SecDef on the timing of program manager assignment, on the adequacy of the program management structure, and on the quality of the program management achieved.

(9) Perform such other duties as the Secretary of Defense may assign.

Relationships are:

In the performance of his functions, the Defense Acquisition Executive shall:

(1) Coordinate the actions of the various OSD offices as they carry out their assigned responsibilities in major Weapon System Acquisition.

(2) Coordinate actions, as appropriate, with the military departments and other Department of Defense agencies having collateral or related functions in the field of his assigned responsibility.

(3) Maintain active liaison for the exchange of information and advice with the military departments and other Department of Defense agencies.

(4) Consult with the Joint Chiefs of Staff on the interaction of system acquisition with operational strategy.

(5) Maintain active liaison with the Office of Federal Procurement Policy in matters concerning system acquisition policy.

(6) Encourage the maintenance of active liaison with appropriate research and development, system design, procurement, logistic, and environmental services agencies outside the Department of Defense, including private business entities, educational or research institutions, or other agencies of government.

Authorities are:

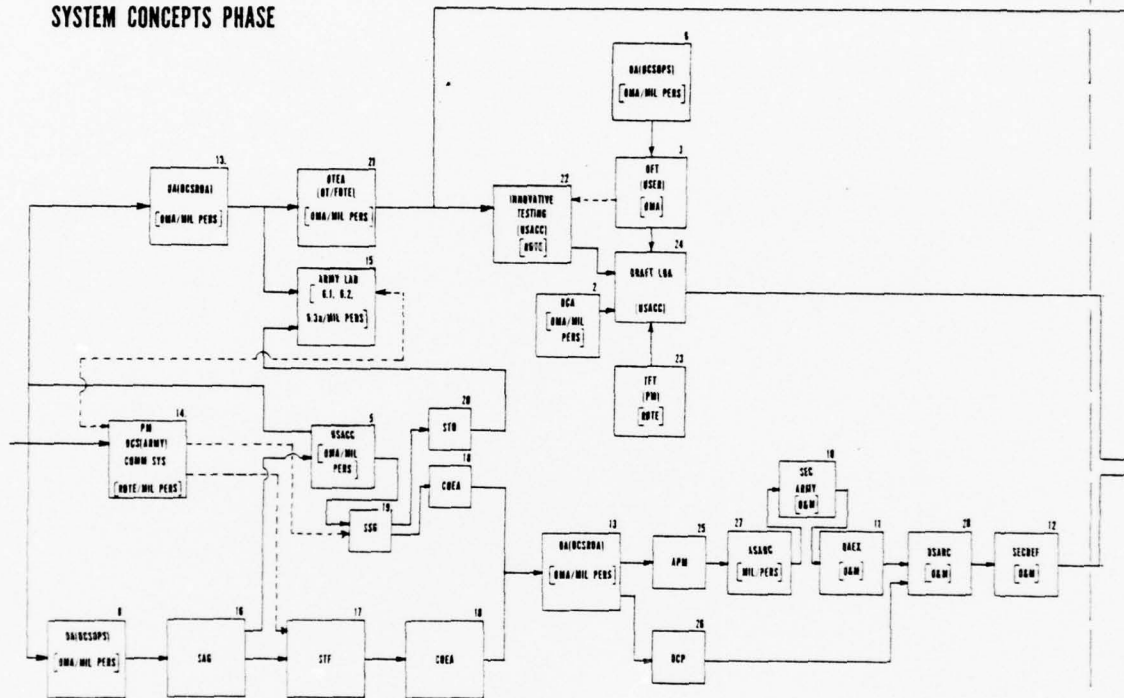
The Defense Acquisition Executive, in the course of exercising the staff functions in his assigned field, including those enumerated in Section III above, is hereby specifically delegated authority to:

(1) Issue instructions and one-time directive-type memoranda, in writing, appropriate to carrying out policies approved by the Secretary of Defense for his assigned fields of responsibilities in accordance with DoD Directive 5025.1, subject: DoD Directives System, March 7, 1961. Such instructions and memoranda to the military departments will be issued through the Secretaries of those departments or their designees.

(2) Consistent with the requirements of reference (c), obtain such reports and information from the military departments and other Department of Defense agencies as may be necessary to the performance of his assigned functions.

c. Reference. DODD 5000.3.

SYSTEM CONCEPTS PHASE



20

Event 13, DA (DCSRDA)

a. Responsibility. Deputy Chief of Staff for Research, Development, and Acquisition (DCSRDA).

b. Description. The Deputy Chief of Staff for Research, Development, and Acquisition (DCSRDA) has Army General Staff responsibility for DA research, development, and acquisition activities. Specifically, DCSRDA has Army General Staff responsibility for:

(1) Life cycle management of Army materiel, including exploratory development through operational systems development and procurement.

(2) Coordinating ASARC, DSARC, IPR.

(3) Developing the acquisition strategy for proposed systems.

(4) Coordinating Army Program Memoranda (APM) and Decision Coordinating Papers (DCP).

(5) Determining system affordability within the materiel acquisition program based upon established priorities.

(6) Formulating and executing the RDTE and procurement portions of Army programs and budgets.

(7) Managing the technology base.

(8) Publishing the Science and Technology Objectives Guide (STOG).

c. Reference. Draft AR 1000.1.

Event 14, PM DCS (ARMY) COMMUNICATIONS SYSTEMS

a. Responsibility. Commander, US Army Communications Systems Agency (USACSA).

b. Description. The USACSA Commander is designated as the project manager and is delegated full line authority of the Commanders, DARCOM and USACC to manage and direct both USACC functions (planning, programming and budgeting [after program tasking], engineering, configuration management, quality assurance, oversea contract administration, installation, user test and evaluation and new equipment training) and DARCOM functions (planning, research and development, programming and budgeting, procurement, production, production engineering, configuration management, materiel developer test and evaluation, product assurance, product improvement, value engineering, distribution, type classification and integrated logistics support).

c. Reference. USACC Regulation 105-12.

Event 15, ARMY LAB

a. Responsibility. Laboratory directors.

b. Description. The long range research objectives are defined by Science and Technology Objectives (STO). A compendium of STO is to be published in the Science and Technology Objective Guide (STOG). The Army laboratories are to:

(1) Insure the flow of scientific and engineering knowledge for formulating Army's baselines in the acquisition process.

(2) Maintain a broad base in basic and applied research for supporting systems development and to provide technical feasibility, schedules and costs for proposed development efforts.

(3) Minimize need for state-of-the-art breakthroughs in engineering developments. Industry and educational institutions are also vital sources of new technology and concepts.

c. Reference. AR 70-1.

Event 16, SAG

a. Responsibility. HQDA, DCSOPS.

b. Description. The study advisory group will convene under the General Staff responsibility of DCSOPS and will generally be used in conjunction with the STF and SSG.

c. Reference. Draft AR 1000.1

Event 17, STF

a. Responsibility. HQDA (DCSOPS)

b. Description. The special task force (STF) is a group convened for exploration of alternative system concepts, to conduct analysis, to insure inclusion of all alternatives within an analysis, to monitor experimentation or to undertake such other tasks that may require the concentration of special expertise for a short duration.

c. Reference. AR 71-9 and AR 70-1.

Event 18, COEA

a. Responsibility. USACC

b. Description. Cost and Operational Effectiveness Analysis (COEA) is one out of four documents which makes up a concept formulation package. The COEA contains:

(1) Comparative effectiveness of alternative means of meeting a requirement for eliminating or reducing a force or mission deficiency.

(2) Validity of requirement in a scenario which has the approval of HQDA, and HQ,USACC.

(3) Cost of developing, producing, distributing, and sustaining each alternative in a military environment.

(4) Updated analysis at each major decision point to include the use of DT/OT data. The PM will participate with USACC in developing costing, scheduling, and logistical data, as required, to support COEA.

c. Reference. DA PAM No. 11-25, May 1975.

Event 19, SSG

a. Responsibility. USACC

b. Description. The special study group (SSG) is a group convened for exploration of alternative system concepts, to conduct analysis, to insure inclusion of all alternatives within an analysis, to monitor experimentation or to undertake such other tasks that may require the concentration of special expertise for a short duration.

c. Reference. AR 71-9 and AR 70-1.

Event 20, STO

- a. Responsibility. USACC
- b. Description. The science and technology objectives (STO) are long range research objectives for the technology base effort. A compendium of STO is to be published in the Science and Technology Objectives Guide (STOG). STO is to be formulated by USACC and to proceed in a manner similar to that of a Required Operational Capability (ROC).
- c. Reference. Draft AR 1000.1.

Event 21, OTEA (OT/FDTE)

- a. Responsibility. Commander, US Army Operational Test and Evaluation Agency (OTEA).
- b. Description. The Commander, US Army Operational Test and Evaluation Agency (OTEA) supports the materiel acquisition and force development processes by exercising responsibility for all operational testing (OT) and evaluation and by managing force development testing and experimentation (FDTE) and joint user testing for the Army. Commander, OTEA verifies that known deficiencies affecting combat capability of a system have been corrected and such corrections, where applicable, have been incorporated into production hardware prior to initial issue to units in the force. Commander, OTEA provides independent evaluations directly to members of the decision review body.
- c. Reference. Draft AR 1000.1.

Event 22, Innovative Testing

a. Responsibility. USACC

b. Description. Innovative testing are small-scale tests conducted to develop information on the feasibility of a concept or system for which a requirement may exist; to provide evaluation of a concept; to determine future military needs; or to examine commercially available equipment. These tests may lead to the development of a new ROC or LOA, the initiation of a PIP, or a formal force development FDTE proposal.

c. Reference. AR 70-10.

Event 23, TFT (PM)

a. Responsibility. Project Manager, DCS (Army) Communications Systems.

b. Description. Technical feasibility testing (TFT) provides test data for technical evaluation and assessment of equipment and systems developed by another service, a foreign nation or a commercial firm. TFT results may provide inputs for (1) research and development documents -- letter of agreement (LOA), letter requirement (LR) and required operational capability (ROC), (2) modification of outline acquisition plan (OAP), and acquisition plan (AP) and (3) initiation of product improvement proposal (PIP). TFT involves procuring and modifying test samples, purchasing or preparation of technical/production packages, repair parts, special tools, test measurement and diagnostic equipment, support equipment, training and TDY of test personnel. This will be funded from RDTE funds.

c. AR 70-10.

Event 24, Draft LOA

- a. Responsibility. USACC
- b. Description. The Letter of Agreement (LOA) is jointly prepared and authenticated by the combat and materiel developers to describe the further investigations needed to develop and validate the system concept and define the operational, technical, and logistic concepts. The LOA supports system advanced development or non-system advanced development, if the conceptual application can be defined.
- c. Reference. AR 70-1.

Event 25, APM

- a. Responsibility. DA (DCSRDA)
- b. Description. The Army Program Memorandum (APM) is an Army acquisition management document which supports the decision-making process for major systems on which the Secretary of the Army has final authority.
- c. Reference. AR 15-14.

Event 26, DCP

a. Responsibility. DOD Component Heads and Defense Acquisition Executive.

b. Description. The purpose of the Decision Coordinating Paper (DCP), is to support the DSARC and ASARC reviews and the Secretary of Defense decision-making process at Milestones I, II and III. The DCP is the principal document for recording essential program information and the Secretary of Defense decisions directing the DoD Component Heads in the execution of major system acquisition programs. The DSARC and ASARC program reviews shall not be convened until the processing of the DCP has been completed. The DoD Component shall initiate the DCP processing and shall prepare the DCP based on an approved DCP outline. The DCP outline shall be prepared in a joint OSD-Component staff planning meeting requested by the Component four to six months prior to the target date for each of the Milestones I, II and III decisions. The meeting will be scheduled through the Defense Acquisition Executive, chaired by his representative and attended by representatives of the DSARC members, OJCS, ODDR&E (T&E) and the CAIG. The DoD Component shall prepare a proposed DCP outline for the meeting. The meeting shall (1) establish the date for the (S)SARC review; (2) establish the date for the DSARC review to follow the (S)SARC review or specify that a DSARC review is not to be conducted, reference DoD Directive 5000.2, par. IV.B.3.b.; (3) identify the program alternatives to be considered; (4) identify the specific program issues to be included;

(5) identify the program information to be presented; and (6) establish a schedule of events and actions to be completed prior to the DSARC and ASARC reviews. The DoD Component shall prepare a DCP on the basis of the approved outline. This DCP shall be identified as the "For Comment" draft DCP prepared for use in developing program coordination, comments and issues. The draft DCP shall be forwarded to the Defense Acquisition Executive 2 months prior to the date for the ASARC review. The Defense Acquisition Executive shall complete the coordination action with the OSD staff and the OJCS working in conjunction with the DoD Component and taking the necessary action to resolve program issues. An issue shall not be included in the DCP unless failing resolution after having been raised to the level of the concerned OSD staff principal, the Chairman JCS and the DoD Component Head. The DCP comments and the remaining unresolved issues shall be forwarded to the DoD Component Head by the Defense Acquisition Executive within 15 working days following receipt of the DCP from the DoD Component. The Component shall prepare a second draft DCP incorporating the comments received on the "For Comment" DCP. This DCP shall be identified as the "For Coordination" draft and shall be distributed to the DSARC and (S)SARC members, the Chairman JCS, the Deputy DDR&E(T&E) and the Chairman of the CAIG by 15 working days prior to the scheduled Council review. The form and content of the DCP shall focus on the particular decision and program phase the DCP is prepared to support. Depending on the decision point, the DCP will contain those elements in table 3.

Table 3
Decision Coordinating Paper

- I. Mission Element Need Statements (MENS) approved at Milestone 0 (as an annex).
- II. Current information updating the MENS (as a cover sheet to the MENS annex).
- III. Description of the alternative programs, including anticipated performance information.
- IV. A summary of the acquisition strategy.
- V. Short- and long-term business planning information.
- VI. Program Structure and management plan to include security classification guidance.
- VII. Areas of program uncertainty (excluding technical risks) and the probably impact.
- VIII. Each DCP prepared for Milestones I and II shall contain a Technology Assessment Annex (TAA) that will identify any area of technological risk remaining in the program and describe plans for addressing these risks. The TAA shall be prepared by the program manager, assisted by a laboratory or laboratories selected for this purpose. The TAA shall not exceed one page in length. The identity of the laboratory shall be included in the TAA.
- IX. A resource annex for each program alternative. The annex shall include Cost, Production and Inventory/Objective Data in the same format as the Congressional Data Sheets.

- X. A one page logistics annex for Milestones I, II and III.
- XI. DCPs prepared for Milestone I shall contain program management constraints for selected program factors for each alternative as the basis for continuing the demonstration and validation effort for the particular alternative.
- XII. DCPs prepared for Milestones II and III shall contain firm program schedule, cost and performance information. Program thresholds shall be established for selected performance, cost and schedule factors representing acceptable, projected variances at program completion and fiscal year thresholds for the same cost and schedule factors to represent acceptable variances at the end of each fiscal year.
- XIII. Test and evaluation planning and status.
- XIV. Program issues including their assessment.
- XV. DSARC and ASARC results and commendations.
- XVI. Secretary of Defense decisions and direction.
- c. Reference. DODD 5000.2, DOD Manual 7110-10M, DODD 5000.3

Event 27, ASARC.

- a. Responsibility. Headquarters, DA.
- b. Description. The Army Systems Acquisition Review Council (ASARC) establishes the Army's recommended course of action on OSD recommended course of action on OSD designated major systems in preparation for

DSARC review and makes major decisions on non-DSARC major acquisition programs. The ASARC reviews all major system acquisition programs at Milestones I, II and III. Upon the request of the ASARC Chairman, the Defense Acquisition Executive designates a senior OSD staff official to participate in the ASARC. The ASARC reports its findings to the Service Secretary who then makes his recommendations to the DSARC Chairman.

c. Reference. DODD 5000.2.

Event 28, DSARC.

a. Responsibility. Defense Acquisition Executive (DAEX), Chairman

b. Description. The Defense Systems Acquisition Review Council (DSARC) provides information and recommendations to the Secretary of Defense (SECDEF) when decisions are necessary on Office of Secretary of Defense (OSD) designated major system acquisitions. Reviews are conducted at each of the Milestones I, II, and III decision points for all major system acquisition programs except when specifically waived by the SECDEF. The DSARC charter is presented in Table 4.

c. Reference. DODD 5000.2.

Table 4

Defense System Acquisition Review Council (DSARC)

Charter

I. DSARC Membership

The DSARC members shall be the:

Defense Acquisition Executive (Chairman)
Under Secretary of Defense (Research and Development)
Assistant Secretary of Defense (Program Analysis and Evaluation)
Assistant Secretary of Defense (Comptroller)
Assistant Secretary of Defense (Communications, Command, Control and Intelligence)
Assistant Secretary of Defense (Manpower Reserve Affairs and Logistics)
Other OSD staff principals when essential to the program under review.

II. Participants and Advisors

The Chairman, JCS shall have a senior representative to participate in the DSARC in an advisory role and to provide the Chairman's position on each major system acquisition program. The Deputy DDR&E (T&E) shall participate in DSARC reviews and shall report to the DSARC and to the Secretary of Defense on test planning and results, reference DoD Directive 5000.3. The Chairman of the Cost Analysis Improvement Group (CAIG) shall participate in the DSARC reviews and report on the DoD Component's cost estimates, reference DoD Directive 5000.4. The DoD Component Head shall participate or have a representative. The Chairman shall determine such other participation that may be needed.

III. DSARC Secretary

The Defense Acquisition Executive shall designate the DSARC Executive Secretary to be responsible for administrative support to the

DSARC to include schedules, providing essential information to participants, minutes of DSARC proceedings, etc.

IV. DSARC Operation

- A. The DSARC shall review those major system acquisition programs at Milestone I that are classified as strategic, nuclear, joint-Service, multi-national, intelligence or communications and command and control systems and all major system acquisition programs at Milestones II and III except when the DSARC review of a specific program at Milestone I, II or III is waived by the Secretary of Defense. The DSARC reviews shall be convened by the Chairman on the schedule established during DCP coordination.
- B. The completed "For Coordination" draft DCP shall be forwarded by the DoD Component Head to the Defense Acquisition Executive and DSARC members and participants by 15 working days prior to the scheduled review, reference DoD Directive 5000.2, enclosure 2. The ODDR&E (T&E) test and evaluation report shall be provided the Defense Acquisition Executive by 2 working days prior to the scheduled DSARC meeting and the Chairman of the CAIG shall provide the evaluation of cost estimates by 5 days prior to the meeting.
- C. The Defense Acquisition Executive shall advise the DoD Component Head and other participants of any special presentations required to the DSARC.
- D. Following completion of each DSARC action the DSARC report consisting of the DCP recommendations and any dissenting positions shall be signed by each DSARC member and forwarded to the Secretary of Defense by the Chairman, reference DoD Directive 5000.2, enclosure 2.

DEMONSTRATION & VALIDATION PHASE

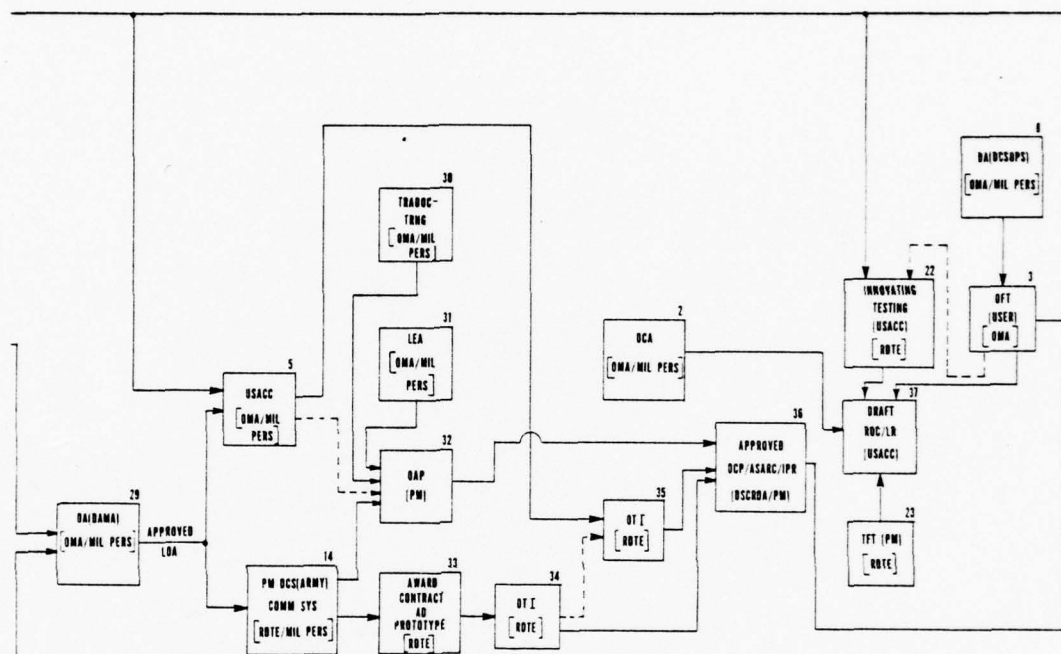


Figure 3

Event 29, DA (DAMO)

- a. Responsibility. Deputy Chief of Staff for Operations and Plans.
- b. Description. The LOA/ROC/LR are prepared by the combat developer coordinated with the materiel developer and logistician and submitted to DA (DAMO) for decision.
- c. Reference. Draft AR 1000.1.

Event 30, TRADOC - TRAINING

- a. Responsibility. US Army Training and Doctrine Command (TRADOC).
- b. Description. TRADOC is responsible for assessing a proposed materiel system for training implications and planning for the establishment of training programs to support its ultimate deployment and for determining the requirement for simulators and training devices early in the development cycle.
- c. Reference. Draft AR 1000.1.

Event 31, LEA.

- a. Responsibility. Commander, US Army Logistics Evaluation Agency (LEA).
- b. Description. The Commander, US Army Logistics Evaluation Agency (LEA) exercises surveillance over the logistical implications of RDTE and acquisition programs. Commander, LEA participates in the review of RDTE and acquisition efforts for logistical implications and

adequacy of integrated logistic support planning to ensure that any item or system being fielded or developed will be logistically supportable.

c. Reference. Draft AR 1000.1.

Event 32, OAP

a. Responsibility. Materiel Developer in coordination with Combat Developer, Trainer, Developmental and Operational Testers and Logisticians.

b. Description. The Outline Acquisition Plan (OAP) is the definitive master plan to achieve the materiel objectives addressed by the LOA in the demonstration and validation phases. It contains the materiel system concepts agreed upon by the materiel developer and combat developer. It provides appropriate analysis of system/program alternatives. It addresses follow-on actions only to the degree that it is practicable. The makeup of an OAP is shown in table 5.

c. Reference. AR 70-27 and DA PAM 70-21.

Table 5 Outline Acquisition Plan

Section I

System Concept Summary

Nature of the program.

Background.

Management issues.

System/Program alternatives

Technical and operational characteristics.

Costs, funding, and cost effectiveness.

Schedules and milestones.

Risks.

Reliability, availability, maintainability, safety, durability, transportability, and electromagnetic compatibility.

Impact on force design and quantities of system required.

Impact on the environment and potential conflict with applicable federal and local environmental protection statutes.

Vulnerability to enemy counteraction.

ECCM considerations.

Assessment of program alternatives with recommendations.

Cost, schedule, and performance thresholds.

Test and evaluation.

Logistical support.

Management plan.

Revision.

Security classification guidelines.

Section II

System Concept Requirements and Analyses

Emerging Concept Formulation Package (CFP).

Trade-off Determination (TOD).

Trade-off Analysis (TOA).

Best Technical Approach (BTA).

Cost and Operational Effectiveness Analysis (COEA).

Organizational and Operational Concept.

Section III

Plans for System Concept Development

Technical Development Plan.

Management Plan.

Financial Plan.

Facilities and Resources Plan.

Threat Support Plan.

Section IV
Coordinated Test Program (CTP)

Chapter 1. Executive Summary

Section I: Introduction

II: Critical Issues/Test Criteria/Data Sources

III: Approach to Test Design

IV: Milestone Chart

V: Test Resources

VI: RAM

Chapter 2. Test Design Plans (TDP) and Outline Test Plans (OTP).

Format for DT Outline Test Plan

Test Title

Test Type

Test Proponent

Test Location

Dates of Test:

1. References
2. Scope
3. Resource Requirements
4. Cost Summary
5. Points of Contact

Format for Operational Testing Outline Test Plan (OTP)

Test Title

Test Type

Command/Agency having OT Responsibility

Test Installation

Test Organization

Test Unit

DA Staff Proponent

Test Location

Test Dates:

1. References
2. Purpose
3. Objectives
4. Scope and Tactical Context
5. Test Resource Requirements
6. Test Milestones
7. Cost Summary
8. Points of contact

Format for DT Test Design Plan (TDP)

- I. General
- II. Time Frame Threat Analysis or Mission of Materiel
- III. Test Design
- IV. Concept of Test
- V. Data Requirements
- VI. Test Conditions
- VII. Methods of Analysis

Format for OT Test Design Plan (TDP)

- I. Introduction
- II. Test Conditions
- III. Data Requirements
- IV. Analysis Logic
- V. Approach to Conduct of Test

Section V

Plan for Personnel and Training

Identification of Skills, Individual and Crew Training Requirements, Training Devices, Training Facilities, and Associated Schedules Necessary to Conduct Advanced Development Investigations.

Section VI

Plan for Logistic Support

Broad General Plan Including Milestones for Verification.

Identification of Alternative Support Concepts, Anticipated Critical Supportability Issues, Recommended Reliability, Availability, and Maintainability Objectives, Life Cycle Support Cost Goals, Anticipated Logistic Environment, and a Plan of Action for the Validation Phase Logistic Effort.

Event 33, Award Contract for Prototype

- a. Responsibility. PM, DCS (Army) Communications Systems.
- b. Description. This event is the process of obtaining prototypes for the purpose (1) of confirming that technology is feasible and the design concept has military utility for the demonstration and validation phase and (2) to assure that the engineering problems have been solved and to permit thorough evaluation of a system in the full-scale engineering development phase.
- c. Reference. AR 70-1.

Event 34, DT I

- a. Responsibility. PM, DCS (Army) Communications Systems.
- b. Description. Development Test I (DT I) demonstrate that technical risks have been identified. Components, subsystems, brass-board configurations or advanced development prototypes are examined to evaluate the potential application of technology and related design approaches prior to entry into full-scale development.
- c. Reference. AR 70-10.

Event 35, OT I

- a. Responsibility. OTEA/USACC.
- b. Description. Operational Test I (OT I) is a test of hardware configuration of a system or its components to provide an indication

of military utility and worth to the user. OT I is accomplished during the validation phase on brassboard configurations, experimental prototypes, or advanced development prototypes to provide data leading to the decision to enter into full-scale development. OT I is done by an organization that is independent of the developing, procuring, and using commands. A preliminary system support package will be evaluated during OT I.

- c. Reference. AR 70-10 and draft AR 1000.1.

Event 36, Approved DCP/ASARC/IPR

- a. Responsibility. For major systems, top managers of Department of Army and SECDEF and for non-major systems project manager.

- b. Description. This event is where major management decisions are made at the appropriate level. There are three levels in the materiel acquisition decision reviews process -- (1) DSARC with the DCP, (2) ASARC with the APM and (3) In-Process Review (IPR) with the AP. Formal approval is needed before authorization is given to enter into the full-scale engineering phase.

- c. Reference. AMC-TRADOC MATERIEL ACQUISITION HANDBOOK, 1 November 1975.

FULL-SCALE ENGINEERING DEVELOPMENT (MILESTONE II)

FULL-SCALE ENGINEERING DEVELOPMENT

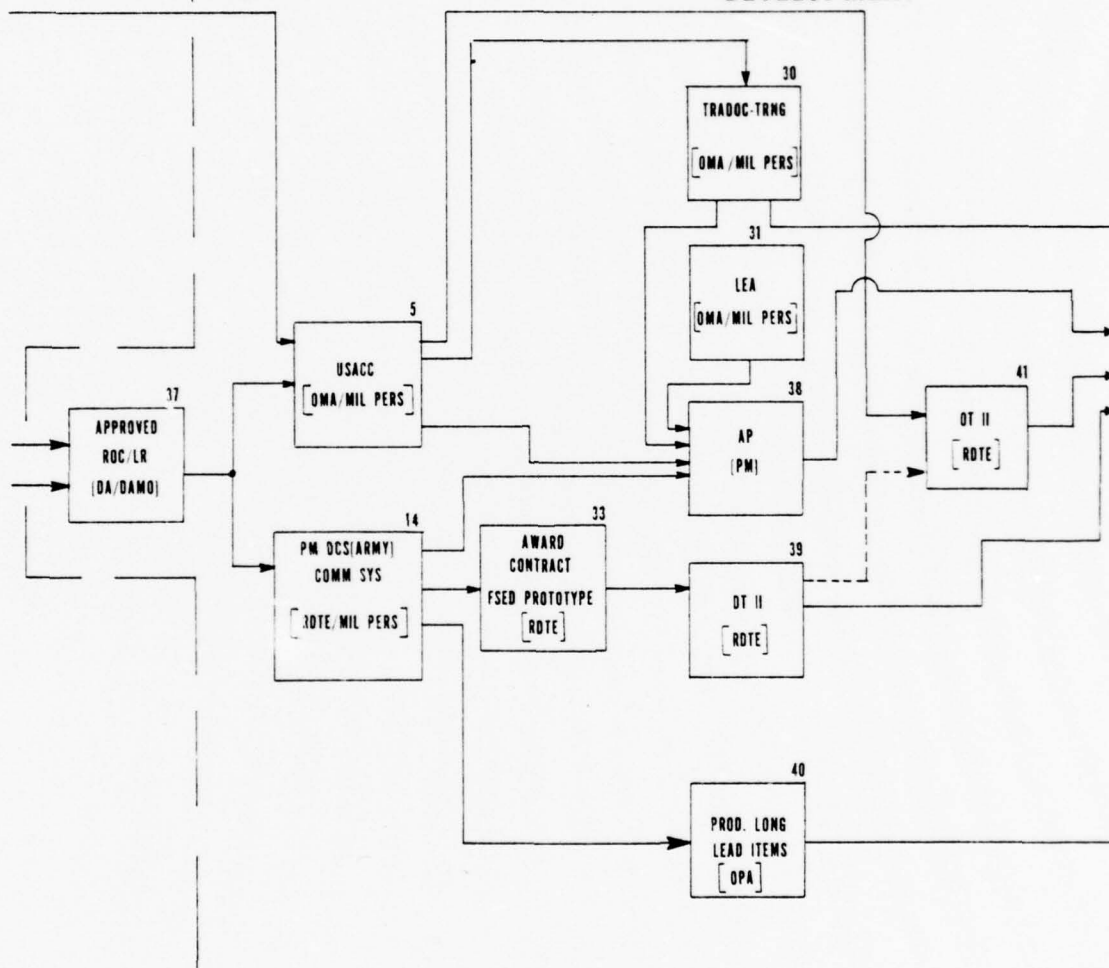


Figure 4

Event 37, Draft ROC/LR

a. Responsibility. USACC.

b. Description. The Required Operational Capability (ROC) is a brief document which describes in narrative form the minimum essential operational, technical, logistic, and cost information required for a HQDA decision to pursue engineering development and/or acquisition of a system. It may also be the document authorizing acquisition of non-developmental materiel. Letter Requirement (LR), jointly authenticated by the combat developer and materiel developer, provides an abbreviated procedure for acquisition of low value items. Low value items are low unit cost, low risk development, or commercial items for which total RDTE expenditures will not exceed \$1 million and procurement costs will not exceed \$2 million for any one fiscal year of \$10 million for the five year program period.

c. Reference. AR 70-1.

Event 38, AP

a. Responsibility. Joint product of the Materiel Developer and Combat Developer in coordination with Trainer, Developmental and Operational Testers, and Logistician.

b. Description. The acquisition plan (AP) is the master planning document which contains records of program decisions and approved materiel requirements and provides appropriate analysis of technical options and life cycle plans for development, testing, production, training

support and logistic support of materiel items. Preparation of an AP is initiated upon HQDA approval of a Required Operational Capability (ROC) and a Letter Requirement (LR). The makeup of an AP is shown in Table 6.

c. Reference. AR 70-27.

Table 6 Acquisition Plan

Section I

System Summary

STO, MENS, LOA, LR or ROC

HQDA Implementing Instructions

APM, DPM or DCP

IPR Agenda Package

(Same format as found in Outline Acquisition Plan [OAP]).

Section II

System Requirements and Analysis

CFP Executive Summary

Basis of Issue Plan (BOIPI)

A plan which indicates the quantity of new or modified equipment planned for each type organization and the planned changes to personnel and supporting equipment. Prepared during the validation phase.

Section III

Plans for System Concept Development

Technical Development Plan

Management Plan

Financial Plan

Facilities and Resources Plan

Producibility Plan

Advance Procurement Plan

Threat Support Plan

Section IV

Coordinated Test Program (CTP)

(Same format as OAP).

Section V

Plan for Personnel and Training Requirements

Identification of new skills, new equipment training requirements, individual and crew training requirements training devices, training facilities and associated schedules.

Qualitative and Quantitative Personnel Requirements Information (QQPRI) provided by materiel developer to the combat developer for use in preparing the unit structure and BOIPI and to the trainer for training implications.

Section VI

Plan for Logistic Support

The Maintenance Plan

Support and Test Equipment

Supply Support

Transportation and Handling

Technical Data

Facilities

Personnel and Training

Logistic Support Resource Funds

Logistic Support Management Information

Event 39, DT II

- a. Responsibility. PM, DCS (Army) Communications Systems.
- b. Description. Development Test II (DT II) provides the final technical data for determining the system's readiness for transition into full production. Programs will not be permitted to enter into production on the basis that significant deficiencies can be corrected and

verified later with production hardware. Only a limited number of design refinements may remain after DT/OT II. Substantive deficiencies ordinarily will preclude advancing into production. It will require deficiency corrections and a retest (DT/OTIIa) to verify that corrections have been made and that the system is suitable for deployment. In unusual circumstances, limited production may be authorized at Milestone III. Strong justification must be presented to the ASARC/IPR to support exception to normal policy.

- c. Reference. AR 70-10 and draft AR 1000.1.

Event 40, Production Long Lead items

- a. Responsibility. PM, DCS (Army) Communications Systems.
- b. Description. The manufacture of selected items of tooling and the procurement of restricted amounts of critical long lead time items may be authorized prior to Milestone III. The latter will be undertaken only for a relatively modest dollar amount of items and only when DT/OT II testing is far enough along to give reasonable confidence of satisfactory completion.

- c. Reference. Draft AR 1000.1.

Event 41, OT II

a. Responsibility. OTEA/USACC.

b. Description. OT II is the testing of engineering development prototype equipment prior to production. OT II is accomplished with typical user operators, crews, or units to estimate a system's military utility, operational effectiveness and operational suitability in as realistic an operational environment as possible. OT II is done by an organization that is independent of the developing, procuring, and using commands. A complete system support package will be validated before Milestone III.

c. Reference. AR 70-10 and draft AR 1000.1.

Event 42, Approved DCP/ASARC/IPR.

a. Responsibility. For major systems, top managers of Department of Army and SECDEF and for non-major systems project manager.

b. Description. This event is where major management decisions are made at the appropriate level. There are three levels in the materiel acquisition decision reviews process -- (1) DSARC with the DCP, (2) ASARC with the APM and (3) In-Process Review (IPR) with the AP. Formal approval is needed before authorization is given to enter into the production and deployment phase.

c. Reference. AMC-TRADOC MATERIEL ACQUISITION HANDBOOK, 1 November 1975.

PRODUCTION & DEPLOYMENT (MILESTONE III)

PRODUCTION & DEPLOYMENT

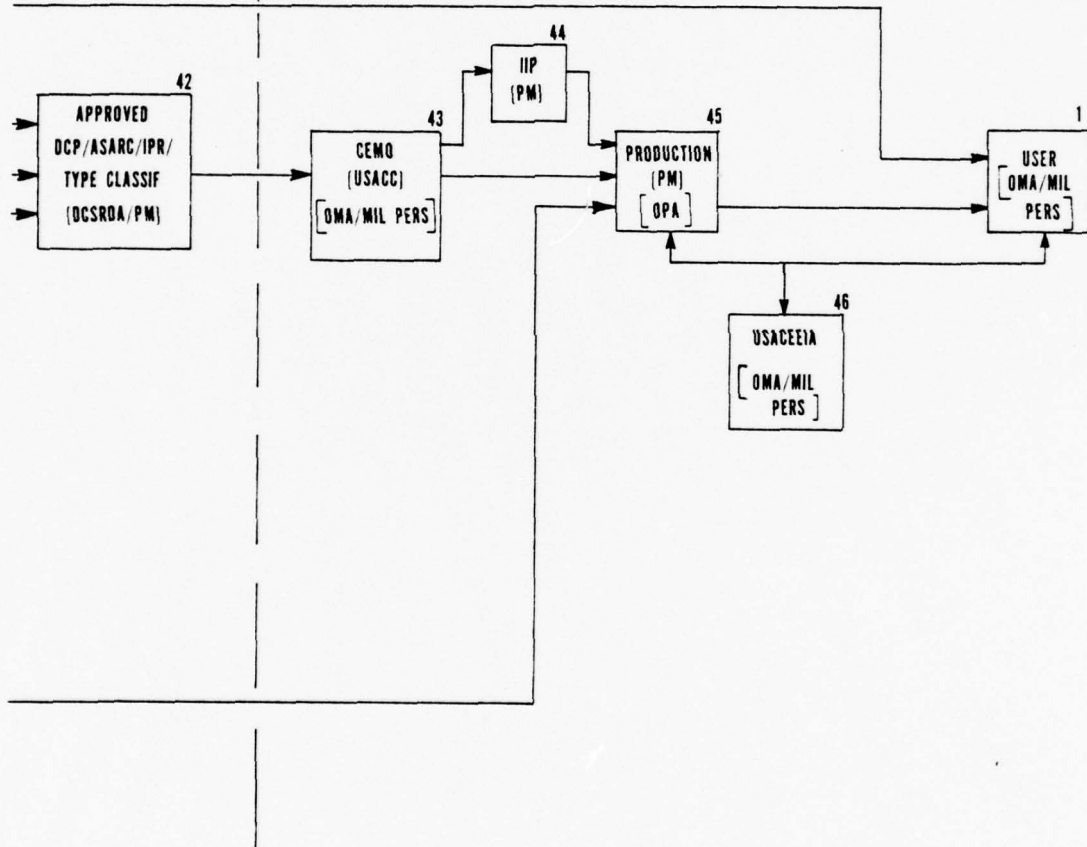


Figure 5

Event 43, CEMO

a. Responsibility. USACC.

b. Description. A command electronics mission order (CEMO) is a tasking document for USACC derivating projects. The CEMO contains the following information:

- Letter of Promulgation. This letter is signed by the Commander, USACC; it commits the expenditure of resources, assigns a command priority, and is the initial tasking for project implementation.

- Project Summary. A brief description of the project aimed at the managerial level and meant to eliminate the necessity to read the whole document.

- General Instructions and Guidance. This directs participants to identify resources they require to implement their portion of the project.

- Participating Organizations. This explains the general roles of all participants.

- Funding. This spells out all approved funding, by phases and years, as the circumstances may be.

- Responsibilities and Tasks. This section assigns specific tasks and responsibilities to each participating USACC command, including the staff elements of Headquarters, USACC.

- Project Control. This establishes objectives against time.

- Reports. Such special reports as may be required.

- c. Reference. US Army Communications Systems Agency, Manager's Guide, February 1976.

Event 44, IIP

- a. Responsibility. Commander, US Army Communications Systems Agency.

- b. Description. An implementation/installation plan (IIP) is a management master plan with sufficient tasking, schedules, and related information and references to stand alone in guiding all participants in the acquisition, installation and implementation of a system. Table 7 contains the table of contents for IIP.

- c. Reference. US Army Communications Systems Agency, Implementation/Installation Plan Manual, December 1976.

Table 7
Typical Table of Contents for IIP'S
Contents

<u>Section</u>	<u>Paragraph</u>	<u>Subject</u>
I		PROJECT SUMMARY
	1.1	References
	1.2	System Objectives
	1.3	System Description
	1.4	Background and Authority
	1.5	Time Phasing
	1.6	Elements and Priorities
II		GENERAL INSTRUCTION AND GUIDANCE
	2.1	Resources and Program Adjustments
	2.2	Implementation Priorities
	2.3	Standardization
	2.4	Interface Requirements
	2.5	Operations and Maintenance
	2.6	Procurement
	2.7	Coordination
	2.8	Priorities
	2.9	International Balance of Payments
	2.10	Assets and Facilities Reallocation
III		PROJECT MANAGEMENT AND CONTROL
	3.1	General
	3.2	DCA Role
	3.3	USACC
	3.4	USACEEIA
	3.5	USACSA
	3.6	6th Signal Command
	3.7	Management Documentation
	3.8	IIP Plan Annex Development
	3.9	Project Control
	3.10	Control Techniques
	3.11	Command and Staff Relationships
IV		FINANCIAL RESOURCES
	4.1	General Funding Information

<u>Section</u>	<u>Paragraph</u>	<u>Subject</u>
V		PROJECT IMPLEMENTATION RESPONSIBILITIES
	5.1	General
	5.2	DCA Responsibilities
	5.3	DCA Pacific Area
	5.4	DA
	5.5	USACC
	5.6	USACSA
	5.7	6th Signal Command
VI		REPORTS
	6.1	General
	6.2	Reporting Concept
	6.3	Reporting Base
	6.4	Reporting Policy
	6.5	Types of Reports
	6.6	Preparation of Monthly (Feeder) Project Status Reports
	6.7	Special and Red Flag Reports
	6.8	Report Submission Date
VII		SCHEDULES
	7.1	General
	7.2	Work Breakdown Structure
	7.3	Responsibility Matrix
	7.4	Milestone Schedule
	7.5	Top Level Network
	7.6	Milestone Definitions
VIII		REFERENCES
IX		GLOSSARY

Event 45, Production

a. Responsibility. Commander, USACSA/PM DCS (Army) Communications Systems.

b. Description. In response to a CEMO, a systems/subsystems/equipments will be procured. This activity involves all USACC derivative functions (planning, programming and budgeting, non R&D, non production, and non maintenance and value engineering, overseas contract administration, installation, on-site test and acceptance and new equipment training) and most of the DARCOM derivative functions (production, production engineering, configuration management, product assurance, product improvement, value engineering, type classification and integrated logistics support).

c. Reference. USACC Regulation 105-12, 15 March 1977.

Event 46, USACEEIA

a. Responsibility. Commander, USACEEIA.

b. Description. US Army Communications Electronics Engineering Installation Agency has the responsibility for (1) non-DARCOM derivative engineering responsibilities (such as, worldwide radio propagation engineering services and Army-wide electromagnetic compatibility engineering services), (2) installation, (3) quality assurance, and (4) final test and evaluation to include coordination with the users.

c. Reference. USACC Regulation 105-12, 15 March 1977.

SECTION III

SUMMARY

Flow charts and description of events were provided in order to obtain a better understanding of the acquisition process of non-tactical communication systems (excluding air traffic control and satellite ground systems). It is a model derived from current DOD and Army acquisition policies. It can serve as a guide for persons who are currently acquiring non-tactical communications systems. For persons who aren't familiar with Army acquisition practices, it will provide information on the overall acquisition process.

It included all the system acquisition phases -- system concept, demonstration and validation, full-scale engineering development, and production and deployments. The steps required for preparing the MENS were identified. The roles of PM DCS(Army) Communications Systems, USACC, DCA, and DA were described. The RDT&E requirement documents - MENS, LOA, ROC and LR were discussed. Various test programs (e.g., Innovative Testing, Technical Feasibility Testing, Development and Operational Testing) including the coordinated Test Program (CTP) document were reviewed. DSARC, ASARC and IPR were mentioned as management decision review bodies of a program.

For non-major programs, there will be little change in the acquisition process with the new DODD 5000.1 and 5000.2. A R&D requirement

document (i.e., LOA, ROC or LR) will be prepared in the system concepts phase or the demonstration and validation phase. It will be an inclosure to a tasking letter from Headquarters, DA in which the materiel developer (i.e., the project manager, PM), the combat developer, the trainer, and the logistician will be identified. The PM will have the responsibility of developing the desired system in accordance with the R&D requirement document. For production items, a CEMO will be issued by USACC to the PM for which the PM will serve as the procuring agent for USACC.

Under the new DODD 5000.1 and 5000.2, the acquisition process for new major programs will be significantly modified by requiring a MENS document and Milestone 0 (program initiation) and by designating a project manager (PM) in the system concepts phase prior to Milestone I (demonstration and validation decision). In the past, PM's were designated in the demonstration and validation phase or the full-scale engineering development phase. DODD 5000.1 and 5000.2 are vague in defining the role of the PM in the system concepts phase. It states that the PM will create a strong PM organization and develop an acquisition strategy for the total program. But, it seems that the PM will have a minor role in the program since the PM will be waiting for the Combat Developer to prepare a COEA and a R&D requirement document and for DSARC I approval before he will have centralized authority for the program in the demonstration and validation phase. In addition, the type of appropriation -

OMA or RDTE - needed for operating the PM organization in this phase has not been identified in DODD 5000.1 and 5000.2 and the draft AR 1000-1.

What this paper presented was a process by which Army acquires non-tactical communication systems. But one must realize that there is no single formula or set of procedures for all situations. There is no substitute for good judgement in the acquisition of non-tactical communication systems.

APPENDIX A

GLOSSARY

Acquisition Plan (AP). A plan prepared in the full scale development phase of the materiel acquisition process for developmental programs. It is prepared by the materiel developer/mission assignee in coordination with the combat developer, logistician, developmental and operational testers, and trainer. The AP constitutes a definitive plan for management of the program to accomplish the objective addressed in an approved materiel requirement document.

Army Systems Acquisition Review Council (ASARC). HQDA will make decisions on major systems through the ASARC. The ASARC reviews major Army programs at specific milestones and prior to a DSARC review, if one is to be held (AR 15-14).

Basis of Issue Plan (BOIP). A plan which indicates the quantity of new or modified equipment planned for each type organization and the planned changes to personnel and supporting equipment. BOIP I is prepared during the validation phase of the RDTE program. BOIP II is prepared during the full scale development phase (AR 71-2).

Combat Developer. The Agency or Command responsible for the formulation of concepts, doctrine, organization, materiel objectives and requirements. For the purpose of this management guide, the US ARMY COMMUNICATIONS COMMAND (USACC) is the principal combat developer and user representative

for combat developments. The US Army Training and Doctrine Command (TRADOC) is the principal trainer.

Concept Formulation Package (CFP). The documentary evidence that the concept formulation effort has satisfied the concept formulation objectives. The package consists of a Trade-off Determination (TOD), Trade-off Analysis (TOA), Best Technical Approach (BTA), and Cost and Operational Effectiveness Analysis (COEA) (AR 71-9).

Coordinated Test Program (CTP). The key management document for assuring that integration of all appropriate testing accomplished by the contractor, materiel developer/mission assignee, and the operational tester is properly planned, coordinated, conducted, analyzed, and reported (AR 70-10).

Decision Coordinating Paper (DCP). The principal document to record essential system program information for use in support of the Secretary of Defense decision-making process at Milestones I, II and III. (Reference DoD Directive 5000.2).

Defense Acquisition Executive. The principal advisor and staff assistant to the Secretary of Defense and the focal point in OSD for system acquisitions. (Reference DoD Directive 5000.30).

Defense Program Memorandum (DPM). A Program Memorandum initiated at the direction of OSD. DPM are applicable to programs of interest to OSD which are not of sufficient importance to warrant DSARC review.

Defense System Acquisition Review Council (DSARC). An advisory body to the Secretary of Defense on major system acquisitions. The Council members are the OSD staff principals. (Reference DoD Directive 5000.2).

In-Process Review (IPR). A review of a nonmajor materiel acquisition program conducted at critical points in the life cycle to evaluate military utility and costs, accomplish effective coordination, and facilitate proper and timely decisions bearing on the future course of the program (AR 70-1).

Integrated Logistic Support (ILS). A composite of all the support considerations necessary to insure the effective and economical support of a system during its life cycle. It is an integral part of all other aspects of system acquisition and operation. ILS is characterized by harmony and coherence among all the logistic elements. The principal elements of ILS related to the overall system life cycle include the maintenance plan, support, and test equipment, supply support, transportation and handling, technical data, facilities, personnel and training, logistic support resource funds, and logistic support management information (DODD 4100.35).

Lead Component. The DoD Component designated by the Secretary of Defense to be responsible for management of a system acquisition involving two or more DoD Components in a joint program.

Logistician. The organization responsible for the surveillance of developmental items for general use by the Army in the field in terms of

reliability, maintainability, durability, and logistic supportability.
(AR 10-25).

Major System Acquisition. A system acquisition program designated by the Secretary of Defense to be of such importance and priority as to require special management attention.

Major Programs. Those projects or tasks so designated by HQDA. All programs selected for DSARC and/or ASARC review are designated as Army major programs. The Secretary of Defense designates Army programs for DSARC review. HQDA may designate additional programs for ASARC review only.
(AR 15-14).

Materiel Developer. The Agency responsible for research, development and production validation of an item (to include the system for its logistic support) which responds to the DA objectives and requirements. For the purpose of this management guide, the US Army Materiel Development and Readiness Command (DARCOM) is the principal materiel developer and the Project Manager DCS (ARMY) Communications Systems is the principal DARCOM action officer reporting directly to the CG, DARCOM.

Materiel Requirement Document. A document which states concisely the minimum essential operational, technical, logistical, and cost information necessary to initiate development or procurement of a materiel system. The documents used to state materiel requirements are:

- a. Mission Element Need Statement (MENS) (DODD 5000.1).
- b. Required Operational Capability (ROC) (AR 71-9).

- c. Joint Service Operational Requirements (JSOR) (AR 71-7).
- d. Telecommunications Requirements (TELER) (AR 105-22).
- e. Qualitative Construction Requirements (QCR) SP 72-011, OCE).
- f. Quick Reaction Capabilities (QRC) (AR 11-8 and AR 105-7).
- g. Qualitative Research Requirement (QRR) (AR 70-1).
- h. Letter Requirement (LR) (AR 71-9).

Mission Element Need Statement (MENS). A statement prepared by a DoD Component to identify and support the need for a new or improved mission capability. The mission need may be the result of a projected deficiency or obsolescence in existing systems, a technological opportunity, or an opportunity to reduce operating cost. The MENS is submitted to the Secretary of Defense for a Milestone 0 decision. (Reference DoD Directive 5000.2).

Operational Test and Evaluation (OT&E). Test and evaluation conducted to estimate the system's military utility, operational effectiveness and operational suitability. (Reference DoD Directive 5000.3).

Outline Acquisition Plan (OAP). A development plan prepared in the validation phase of the RDTE program. It is prepared by the materiel developer in coordination with the combat developer, logistician, developmental and operational testers, and trainer. The OAP will constitute a definitive plan for advanced development and will address follow-on actions only to the degree that it is practicable. In conjunction with the letter of agreement (LOA), the OAP is a document

of record to support the advanced development effort and supports the LOA by providing a plan for management of the RDTE effort to achieve the materiel objective addressed by the LOA. (AR 70-27).

Project Manager. An individual chartered by the Secretary of the Army who is assigned the responsibility and delegated the full-line authority for the centralized management of a specified development/acquisition project. For the purpose of this management guide, the PM DCS (ARMY) Communications Systems is responsible for the centralized Army management of DCS tasks assigned to the Army, and other systems/tasks assigned to USACC. This PM office differs from the general concept in Department of the Army in that no single system can be identified as the goal to which the project is directed, but rather a number of systems and equipment are managed for the continuing development and improvement of non-tactical communications. (AR 70-17).

Program Manager Charter. A document approved by the DoD Component Head stating the program manager's responsibility, authority and accountability in the management of a major system acquisition program.

Qualitative and Quantitative Personnel Requirements Information (QQPRI).

A document which provides the most current information concerning numbers and skills of personnel involved in the operation, support and maintenance of the proposed materiel system (AR 611-1).

Tester. The agency responsible for the developmental testing (DT) or operational testing (OT) of materiel. DT is planned, conducted, and monitored by the materiel developer. All OT is the responsibility of and is managed by OTEA. OT is normally conducted by OTEA for major and selected non-major systems and by USACC for other non-major systems.

Trainer. The agency responsible for the planning for and conduct of the training which will provide the necessary skills to operate and maintain items or systems.

System Acquisition Process. A sequence of specified decision events and phases of activity directed to achievement of established program objectives in the acquisition of Defense systems and extending from approval of a mission need through successful deployment of the Defense system or termination of the program.

System Program Office. The office of the program manager and the single point of contact with industry, Government agencies and other activities participating in the system acquisition process.

APPENDIX B

ACRONYMS

AP - Acquisition Plan
APM - Army Program Memorandum
ASARC - Army Systems Acquisition Review Council
CEMO - Command Electronics Mission Order
CTP - Coordinated Test Program
COEA - Cost and Operational Effectiveness Analysis
DAEX - Defense Acquisition Executive
DARCOM - US Army Materiel Development and Readiness Command
DCA - Defense Communications Agency
DCP - Decision Coordinating Paper
DPM - Defense Program Memorandum
DSARC - Defense Systems Acquisition Review Council
DT - Development Testing
FYTP - Five-Year Test Program
FDTE - Force Development Testing and Experimentation
FSED - Full-Scale Engineering Development
IIP - Implementation/Installation Plan
ILS - Integrated Logistic Support
IOC - Initial Operational Capability
IPR - In-Process Review
LEA - US Army Logistics Evaluation Agency
LOA - Letter of Agreement

LR - Letter Requirement
MENS - Mission Element Need Statement
OAP - Outline Acquisition Plan
OFT - Operational Feasibility Testing
O&M - Operation and Maintenance
OMA - Operation and Maintenance Army
OPA - Other Procurement - Army
OSD - Office of the Secretary of Defense
OT - Operational Testing
OTEA - US Army Operational Test and Evaluation Agency
PM - Project Manager
PPBS - Planning, Programming, and Budgeting System
ROC - Required Operational Capability
SA - Secretary of the Army
SAG - Study Advisory Group
SAR - Selected Acquisition Report
SECDEF - Secretary of Defense
SSG - Special Study Group
STF - Special Task Force
STO - Science and Technology Objectives
STOG - Science and Technology Objectives Guide
TELER - Telecommunications Requirement
TFT - Technical Feasibility Testing
USACC - US Army Communications Command
USACEEIA - US Army Communications-Electronics Engineering Installation
Agency